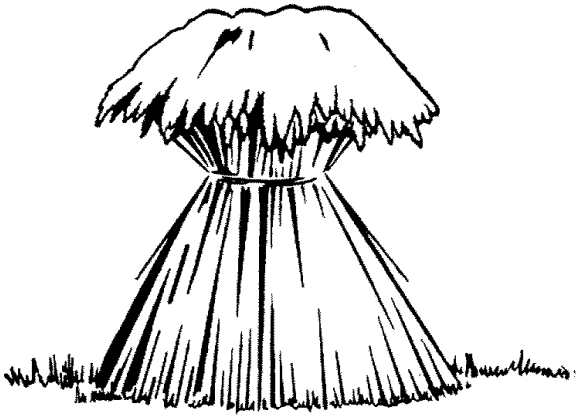
U.C. COOPERATIVE EXTENSION

SAMPLE COST TO ESTABLISH AND PRODUCE

WHEAT



FLOOD IRRIGATED

IMPERIAL COUNTY – 2003

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For an explanation of calculations used for the study refer to the attached General Assumptions or call the author, Keith S. Mayberry , at the Imperial County Cooperative Extension office, (619)352-9474 or e-mail at ksmayberry@ucdavis.edu.

FOREWORD

We wish to thank growers, pest control advisors, chemical applicators and dealers, custom farm operators, fertilizer dealers, seed companies, contract harvesters, equipment companies, and the Imperial County Agricultural Commissioners office for providing us with the data necessary to compile this circular. Without them we could not have achieved the accuracy needed for evaluating the cost of production for the field crop industry in Imperial County.

The information presented herein allows one to get a "ballpark" idea of field crop production costs and practices in the Imperial County. They do not reflect the exact values or practices of any one grower, but are rather an average of countywide prevailing costs and practices. Exact costs incurred by individual growers depend upon many variables such as weather, land rent, seed, choice of agrichemicals, location, time of planting, etc. No exact comparison with individual grower practice is possible or intended. The budgets do reflect, however, the prevailing industry trends within the region.

Overhead usually includes secretarial and office expenses, general farm supplies, communications, utilities, farm shop, transportation, moving farm equipment, accountants, insurance, safety training, permits, etc. In most of the crop guidelines contained in this circular we used 13 % of the total of land preparation, growing costs and land rent to estimate overhead.

Since all of the inputs used to figure production costs are impossible to document in a single page, we have included extra expense in man-hours or overhead to account for such items as pipe setting, motor grader, water truck, shovel work, bird and rodent control, etc. Whenever possible we have given the costs of these operations per hour listed on the cultural operations page.

Not included in these production costs are expenses resulting from management fees, loans, providing supervision, or return on investments. The crop budgets also do not contain expenses encumbered for road and ditch maintenance, and perimeter weed control. If all the above items were taken into account, the budget may need to be increased by 7-15%.

Where applicable we have used terminology that is commonly used in the agricultural industry. These terms are compiled in a glossary at the end of the circular. We feel that an understanding of these terms will be useful to entry-level growers, bankers, students and visitors.

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2002-2003 Field/Vegetable Prevailing Rate for Field Operations
IMPERIAL COUNTY

HEAVY TRACTOR WORK & LAND PREPARATION

OPERATION	$/ACRE
Plow	30.50
Subsoil, 2nd gear	39.00
Landplane	12.75
Triplane	11.25
Chisel 15”	25.00
Wil-Rich chisel	16.00
Big Ox	24.00
Slip plow	41.00
Pull/disc borders	6.75
Make cross checks (taps)	6.25
Break border	6.00
Disc, stubble	21.00
Disc, regular	12.50
Corrugate	11.00
Disc, regular with ring roller	13.50
List 30” beds 12-row	15.00
List 40” beds 8-row	15.00
Float	10.00
Disc, borders	7.00
Dump (scraper) borders	14.50

LIGHT TRACTOR WORK

Power mulch dry	25.00
Power mulch with herbicide	28.00
Shape 30” 6 row	10.75
Shape 40” 4 row	10.75
Plant 30” beds nonprecision	20.00
Plant 40” beds nonprecision	18.00
Precision plant 30” beds	22.00
Precision plant 40” beds	20.00
Mulch plant wheat	19.50
Plant alfalfa (corrugated)	17.50
Plant bermudagrass (flat)	13.75
Plant sudangrass	14.75
Cultivate 30” beds 4-row	16.00
Cultivate 40” beds 4-row	14.00
Spike 30” beds 4-row	13.25
Spike 40” beds 4-row	11.25
Spike and furrow out 30” 4-row	14.00
Spike and furrow out 40” 4-row	12.00
Furrow out 30” beds 4-row	13.25
Furrow out 40” beds 4-row	11.25
Lilliston 30” beds 6-row	13.00
Lilliston 40” beds 4-row	13.00
Lilliston 30” beds with/herbicides 6-row	15.00
Lilliston 40” beds with/herbicides 4 -row	15.00
Inject fertilizer & furrow out 30” beds 4-row	15.00
Inject fertilizer & furrow out 40” beds 4-row	13.00
Fertilize dry & furrow out 30” beds	17.00
Fertilize dry & furrow out 40” beds	15.00
Flat inject fertilizer NH_3	15.00
Broadcast dry fertilizer	7.00
Ground spray 40” 8-row	12.00
Ground spray 30” 8-row	14.00
Chop cotton stalks	13.75

HARVEST COSTS Field Crops

	BY UNIT
Combine alfalfa seed	41.75/acre
Windrow alfalfa seed	17.50/acre
Rake bermudagrass	5.00/acre
Swath bermudagrass	13.50/acre
Swath sudangrass	11.25/acre
Rake sudangrass	5.25/acre
Swath alfalfa	8.00/acre
Rake alfalfa	4.50/acre
Bale (all types of hay- small bale)	0.65/bale
Haul & stack hay – small bale	0.25/bale
Bale (large bale 4X4)	10.00/bale
Bale (large bale Jr. 3X4)	9.00/bale
Stack & load large bale	6.00/bale
Dig sugar beets	2.60/clean ton
Haul sugar beets	2.45/clean ton
Combine wheat	15 per acre + 0.55 /cwt over 1 ton
Haul wheat	5.50/ton
Combine bermudagrass seed 1st time	40.00/acre
Combine bermudagrass seed 2st time	25.00/acre
Haul bermudagrass seed (local)	175/load
Haul bermudagrass seed (Yuma)	300/load

MISCELLANEOUS OPERATIONS BY THE HOUR

Motor grader	48.00
Backhoe	45.00
Water truck	40.00
Wheel tractor	35.00
Scraper	36.00
Versatile	56.00
D-6	56.00
D-8	70.00
Buck ends of field	28.00
Pipe setting (2 men)	37.00
Laser	88.00
Work ends (disc out rotobucks)	35.00

IMPERIAL COUNTY WHEAT CULTURE 2002-2003

Annual acreage, yields, and value of wheat in Imperial County, CA for five consecutive years

Year	Acres	Yield/Acre (tons)	Value/Acre
2001	46,620	3.30	$430
2000	55,504	3.17	$408
1999	44,303	3.06	$361
1998	83,882	3.30	$486
1997	93,431	3.22	$491

(Source: I.C. Agricultural Commissioner's Reports).

PLANTING DATES, RATES AND DEPTH: Optimum planting dates for high wheat yields are from December 1 through January 15. Seeding rates range from 100-150 pounds per acre. If the crop is irrigated to emergence, plant the seed 0.5 to .75 inch deep. When wheat is planted in mulch, seed should not be planted deeper than 3-4 inches.

VARIETIES: Desert Durum® is a trademark used for locally grown durum wheats that command a premium in the marketplace. Commonly used varieties include "Kronos", "Kofa", “WPB 881”, and "Orita”. Much of the durum wheat is used for making semolina flour for pasta.

FERTILIZATION: Imperial Valley soils usually contain sufficient phosphorus for wheat production. This is especially true if phosphate fertilizer has been applied to other crops in the rotation (i.e., vegetables). In a wheat-sudangrass rotation, phosphate fertilizer, if used, should be applied to the wheat. Wheat generally needs 200-250 pounds of actual nitrogen per acre, depending on the previous crop. Less nitrogen is needed when wheat follows early winter vegetables or alfalfa. For good yield and quality of varieties with a tendency towards yellowberry (soft, bleached kernels), nitrogen fertilizer should be split into 3 applications—at preplant, tillering, and boot stage.

IRRIGATION: The pre-mulch irrigation should be heavy. Subsequent irrigations should be sufficient to maintain good growth and avoid plant stress. The last irrigation may be applied as late as the medium dough stage. Later irrigations are of no benefit once the stem below the head has began to change to a straw color.

PEST CONTROL: Weeds need to be controlled in irrigated wheat to protect the yield and reduce the weed population in following crops. Often wheat planted in the mulch does not

Flood Irrigated WHEAT PRODUCTION COSTS 2002-2003

Flood Irrigated to Emergence 80 acre field

Mechanical operations at prevailing rates. Labor at $9.25 /hr. ($6.75 plus SS, unemployment, workman's compensation and fringe benefits).
Yield--3 tons per acre. Days to maturity 90-170 days.

	Prevailing	MATERIALS		HAND LABOR		COST
OPERATION	Rate	Type/Amount	Cost	Hours	Dollars	Per Acre
LAND PREPARATION						
Stubble disc 1x	21.00					21.00
Disc 2x	12.50					25.00
Inject fertilizer	15.00	100 lb N (anhydrous)	18.00			33.00
Triplane 1x	11.25					11.25
Disc borders	6.75					6.75
Float	10.00					10.00
TOTAL LAND PREPARATION COSTS						107.00
GROWING PERIOD						
Drill with cultipacker	15.00	150 lb seed @ .21	31.50			46.50
Irrigate 5-7x		3 ac-ft	48.00	2	18.50	66.50
Fertilize 3x (water-run)		150 lb N (anhydrous)	27.00			27.00
Weed control 2x ground	12.50	Herbicide	20.00			32.50
TOTAL GROWING PERIOD COSTS						172.50
GROWING PERIOD & LAND PREPARATION COSTS						279.50
Land rent (net acres)						90.00
Cash overhead--	10 % of growing period, land prep & land rent					36.95
TOTAL PREHARVEST COSTS						406.45
HARVEST COSTS						
Combine	3 tons @ $15.5/ac + 0.57/ cwt over 1 ton					38.30
Haul	3 tons @ 5.00 /ton					15.00
Wheat Commission Assessment	0.035 cents/cwt					1.74
TOTAL HARVEST COSTS						55.04
TOTAL ALL COSTS						461.49

PROJECTED NET GAIN ($/PER ACRE)

CWT	Price/cwt ($)					Break-even
(per acre)	6.00	7.00	8.00	9.00	10.00	($/cwt)
40	-204	-164	-124	-84	-44	11.09
50	-152	-102	-52	-2	48	9.04
60	-100	-40	20	80	140	7.67
70	-49	21	91	161	231	6.69
80	3	83	163	243	323	5.96

require weed control due to the early competition. Consult your PCA or Weed Science Farm Advisor for herbicides that are available for use.

Aphids are the only insects that may cause serious damage to wheat. Greenbug and the Russian wheat aphid occasionally cause severe damage if not controlled.

Black point or kernel smudge is characterized by dark and shriveled kernels. Germination and market value of the wheat is decreased. Several fungi may be involved including *Alternaria*, *Fusarium* and *Helminthosporium* species. Other diseases include powdery mildew (*Erysiphe graminis*), foot rot (*Fusarium graminearum*), root rot (*Helminthosporium sativum*), and needle nematode (*Longidorus africanus*).

HARVESTING: Wheat harvest begins mid-May and continues through mid-June. Harvesting is normally done by commercial harvesting companies. In addition to local companies, there are many custom harvesters who travel from the Midwest.